



Evergreen Recycling and Disposal Facility
2625 East Broadway
Northwood, OH 43619
(419) 666-5136
(419) 697-9534

January 25, 2016

Mr. Mohammed Smidi
Ohio EPA/Northwest District Office
Division of Air Pollution Control
347 North Dunbridge Road
Bowling Green, OH 43402

**Re: Evergreen Recycling and Disposal Facility
Facility ID No. 03-87-00-0259
2nd Semi-Annual NSPS Report - 2015**

Dear Mr. Smidi:

Evergreen Recycling and Disposal Facility, Inc. respectfully submits this New Source Performance Standards (NSPS) Semi-Annual Report for the Evergreen RDF. In accordance with 40 CFR Part 60, Subpart WWW, the attached document serves as the landfill gas collection and control system (GCCS) report for Evergreen RDF. To comply with the monitoring, record keeping and reporting requirements of 40 CFR 63 Subparts AAAA of the National Emission Standards for Hazardous Air Pollutants (NESHAP), the information provided in the NSPS report is submitted on a semi-annual basis. The reporting period covered under this report is July 1, 2015 through December 31, 2015.

The above report is required to be submitted by January 31, 2016.

If you have any questions regarding this submittal, please feel free to contact me at 419-666-5136 ext. 3163 or John Randolph at 419-666-5136 ext. 3168.

Sincerely,

Submitted through OEPA e-Business Center

Steve Lonneman
Senior District Manager
Evergreen RDF

File: Agency Correspondence File
Title V Files

**LANDFILL GAS COLLECTION AND CONTROL
SYSTEM SEMI-ANNUAL REPORT
JULY 1, 2015 - DECEMBER 31, 2015**

**EVERGREEN RECYCLING & DISPOSAL FACILITY
FACILITY ID: 03-87-00-0259**

Prepared for
Waste Management of Ohio
Evergreen Recycling & Disposal Facility
January 25, 2016

**Landfill Gas Collection and Control System Semi-annual Report
July 1, 2015 - December 31, 2015
Evergreen Recycling & Disposal Facility
Facility ID: 03-87-00-0259
Northwood, Ohio**

The material and data in this report were prepared under the supervision and direction of the undersigned.

A handwritten signature in black ink, appearing to read 'John E. Randolph', is written over a horizontal line.

John E. Randolph, P.E.
District Engineer

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1 INTRODUCTION

1.1 PURPOSE

This document serves as a landfill gas collection and control system (GCCS) semi-annual report for the Evergreen Recycling & Disposal Facility (Evergreen) pursuant to 40 Code of Federal Regulations (CFR) Part 60, Subpart WWW, New Source Performance Standards (NSPS) for municipal solid waste landfill and 40 CFR Part 63, Subparts A and AAAA, National Emissions Standards for Hazardous Air Pollutants (NESHAP) for municipal solid waste landfills. The purpose of this report is to provide performance documentation in accordance with the NSPS requirements for the installed and active portions of the GCCS at the Evergreen facility for the reporting period July 1, 2015 through December 31, 2015.

1.2 RECORD KEEPING AND REPORTING

This report is being submitted pursuant to 40 CFR 60.757(f) and 40 CFR 63.1980. Records will be prepared and maintained in accordance with 40 CFR 60.758 and 40 CFR 63.1980. The primary location for record storage is the Evergreen facility.

2 EXISTING SITE CONDITIONS

2.1 LANDFILL DESCRIPTION

Evergreen is located at 2625 East Broadway Street, Northwood, OH in Wood County. Evergreen is a Municipal Solid Waste Landfill (MSW) and accepts most household and commercial wastes. The Landfill also accepts non-hazardous industrial wastes.

Evergreen is owned and operated by Waste Management of Ohio and serves the residents of Wood County and adjacent counties. Current disposal rates at Evergreen are estimated at 700 tons per day. The total approved design capacity for Evergreen is 25.9 million cubic yards.

2.2 LANDFILL GAS COLLECTION AND CONTROL SYSTEM

Evergreen has installed and currently operates a GCCS for Cells 1 through 11B and the north sanitary landfill. The existing GCCS consists of approximately 99 vertical landfill gas (LFG) extraction wells. These extraction wells convey the LFG from the refuse, through a series of lateral and header pipes. The LFG is conveyed through this pipe network to an open flare with a design capacity of 4,260 standard cubic feet per minute (scfm) and/or sent to the WMRE of Ohio, LLC compressor pipeline.

3 SEMI-ANNUAL REPORT REQUIREMENTS

In accordance with 40 CFR 60.757(f) and 40 CFR 63.1980(a) a semi-annual report must be submitted to the regulatory agency by applicable facilities, which contains performance and monitoring data for the operation of the GCCS.

3.1 SEMI-ANNUAL REPORT REQUIREMENTS

Applicable requirements under the semi-annual report are as follows:

1. Value and length of time for exceedance of parameters monitored under 40 CFR 60.756(a), (b), (c), and (d) which include:
 - a. Monthly recording of gauge pressure at all wellheads, all wells must operate under negative pressure conditions
 - b. Monthly monitoring of oxygen or nitrogen concentrations at all wellheads, oxygen be less than 5% or nitrogen must be less than 20%
 - c. Monthly monitoring of temperatures at all wellheads, temperature be less than 55°C (131°F)
 - d. Report all 3-hour averaging block of numerical continuous parameter (i.e., combustion temperature) monitoring data containing at least one hour of invalid data. A valid hour of data must have measured values for at least three 15-minute monitoring periods system breakdowns, repairs, calibration within the hour. Data collected during any of the events described in 40 CFR 63.1975 (monitoring checks; control device startup, shutdowns and malfunctions) are not to be included in any 3-hour averaging block (40 CFR 63.1955 – 40 CFR 63.1975).
2. Description and duration of all periods when the gas stream was diverted from the control device through a bypass line.
3. Description and duration of all periods when the control device was not operating for greater than one hour and the length of time that the device was not operating.
4. All periods greater than five (5) days when the collection system was not operating.
5. Location and concentration of all surface emission exceedances (≥ 500 ppm above background).
6. Date of installation and location of all wells or system expansions both planned and as the result of monitoring exceedances.

4 SEMI-ANNUAL REPORT

The information included in this section and applicable appendices, satisfies the requirements under 40 CFR 60.757(f) for the semi-annual report.

4.1 WELL FIELD MONITORING

Monitoring data for the GCCS has been collected at a minimum monthly frequency for inclusion in this semi-annual report. Evergreen personnel collect the well field data. Wellhead monitoring data (pressure, temperature, and oxygen concentration) were recorded using a Landtec GEM-2000. The GEM-2000 was calibrated according to manufacturer's recommendations prior to each monitoring event.

Monthly monitoring, corrective measures, and 15-day re-monitoring were conducted at the facility in accordance with the Title V permit and the NSPS regulations. In most cases, there were no exceedances of the operational parameters at the wellheads. A description of the instances when corrective action was needed or did not prove to be sufficient is detailed below.

Immediate corrections were made to the wells which exhibited pressure, temperature, or oxygen exceedances during the time period covered by this report (within 5 days of the initial measured exceedance). All wells were generally re-monitored within 15 days to determine whether additional corrective actions were necessary to achieve proper operating parameter ranges. Exceedances greater than 15 days are noted below.

Monitoring data showing the exceedances and the corrective measures that occurred during this reporting period are included in Appendix A.

4.1.1 PRESSURE

Several pressure deviations were recorded during the reporting period and all deviations were corrected within the 15-day time limit, except for the well listed below.

Well ID/Month/Total days

EVGW69R2 (December 11, 2015 – end of reporting period; 20 days as of end of reporting period): An Alternative Timeline Request was submitted to the Ohio EPA on December 22, 2015. The lateral line for well EVGW69R2 is blocked. The facility is intending to extend a temporary jumper line to the well as soon as weather permits.

4.1.2 TEMPERATURE

There were no temperature deviations during the reporting period.

4.1.3 OXYGEN

Several oxygen deviations were recorded during the reporting period and all deviations were corrected within the 15-day time limit, except for the well listed below.

Well ID/Month/Total days

EVGEW26R (December 11, 2015 – end of reporting period; 20 days as of end of reporting period): An Alternative Timeline Request was submitted to the Ohio EPA on December 22, 2015. EVGEW26R is being influenced by adjacent wells. The facility has been tuning the well and adjacent wells in an attempt to decrease the oxygen.

4.2 LFG BYPASS OPERATIONS

During the period encompassed under this report, LFG was not diverted through a bypass line. There is no bypass line installed on the GCCS.

4.3 CONTROL DEVICE OPERATION

The operating record for the open flare was reviewed for the reporting period. Based on the information provided, the flare was not in operation for more than one hour on three (3) occasions. A summary of the period and duration when the control device was not in operation is included in Appendix B. No LFG was released to the atmosphere during the flare shutdown since the gas collection system is automatically closed off when the control device is shutdown.

4.3.1 GAS FLOW MONITORING DEVICE

Pursuant to 40 CFR 60.756(c)(2)(i), the operator of an open flare shall install, calibrate, and maintain a gas flow rate measuring device that shall record the flow to the control device at least every 15 minutes. The flow at the open flare located at Evergreen is recorded by a Yokogawa digital flow monitoring device. During this reporting period, the Yokogawa digital flow monitoring device malfunctioned one (1) time. The flare is also equipped with an ultraviolet sensor and thermocouple which monitors the presence of a flame. These

mechanisms ensure the flare was operating within its proper operational ranges. The flare has pre-programmed/fail safe set points which are linked to an auto dialer which calls out to a technician should any temperature drop or shutdowns occur. Therefore, flare was not down during this timeframe. No landfill gas was released to the atmosphere during the monitoring device issues. The table below summarizes the instance.

Date(s) of Event	Duration of Event (Hours)	Description of Malfunction
12/10/15	0.37	Power was removed to the flow meter and Yokogawa in order to switch out the flow meters for calibration.

4.4 COLLECTION SYSTEM OPERATION

During the period encompassed under this report, the gas collection system was not shutdown for more than five days on any occasion.

4.5 SURFACE EMISSIONS MONITORING

Quarterly surface emissions monitoring was performed by WM personnel using a flame ionization detector, or FID as required under 40 CFR 60.754(c)(3).

The 3rd quarter 2015 Surface Emissions Monitoring (SEM) event was completed on September 23 and 24, 2015. There were zero (0) locations that showed elevated methane concentrations of 500 ppm above background methane concentration.

The 4th quarter 2015 SEM event was completed on December 17 and 18, 2015. There were five (5) FID readings greater than 500-ppm methane above background during the initial scan of the uncapped areas. Additional soil was placed on the exceedance locations. The 10-day recheck was conducted on December 24, 2015 and the 30-day recheck was conducted on January 22, 2016. Both re-monitoring events showed methane readings less than 500-ppm above background. Horizontal collectors were installed in the vicinity of the exceedance locations to increase landfill gas collection.

Appendix C includes the results of the quarterly surface monitoring events.

4.6 COLLECTION SYSTEM EXPANSION

The following collection system expansion was completed during the reporting period. Appendix D includes the 2014 GCCS Record Drawings.

- Drilling for and installation of eight (8) new landfill gas extraction wells;
- Installation of landfill gas collection lateral pipes (six-inch and eight-inch SDR 17 HDPE pipes), and respective tie-ins to existing laterals and headers;
- Installation of condensate lines (three-inch SDR 11 HDPE pipe);
- Installation of air supply lines (two-inch SDR 9 HDPE pipe);
- Burial of existing sections of aboveground air supply and condensate drain lines and installation of associated vertical risers; and
- Installation of a six-inch HDPE perforated landfill gas collection pipe and 60 mil HDPE rain flap near the perimeter of the landfill.

APPENDIX A

MONTHLY WELLHEAD MONITORING EXCEEDANCE RESULTS

Evergreen Recycling Disposal Facility
July 1, 2015 through December 31, 2015
Well Exceedances

Device Name	Date/Time	O ₂ (Oxygen) (%)	Initial Static Pressure ("H ₂ O)	Adjusted Static Pressure ("H ₂ O)	Initial Temperature (°F)	Adjusted Temperature (°F)	Id Comments	Duration of Exceedance (Days)
EVGEN101	9/17/2015 15:29	0	0.65	-0.07	102.7	104.2	NSPS/EG CAI;Inc. Flow/Vac.;Surging;Check Header	Immediate Correction Pressure
EVGEN101	10/14/2015 13:45	0	0.37	0.37	101.5	101.6	NSPS/EG CAI;Fully Open;Surging	
EVGEN101	10/19/2015 14:54	0	0.49	0.49	100.1	100.1	NSPS/EG CAI;Fully Open;Surging;Check Header	
EVGEN101	10/28/2015 15:08	0	-2.25	-2.33	102.6	102.6	Inc. Flow/Vac.;Orifice Size Wrong	14 Days Pressure
EVGEOCD1	11/18/2015 13:34	7.5	-0.9	-0.3	56	57	NSPS/EG CAI;Dec. Flow/Vac.;Surging;Orifice Size Wrong	
EVGEOCD1	11/18/2015 13:58	0.1	-0.3	-0.3	56	56	Inc. Flow/Vac.	Immediate Correction Oxygen
EVGEOCD2	9/16/2015 15:57	4.1	0.16	-0.02	79.8	79.4	NSPS/EG CAI;Inc. Flow/Vac.	Immediate Correction Pressure
EVGEOCD2	10/13/2015 16:29	9.3	-0.25	-0.15	72.4	72.3	NSPS/EG CAI;Dec. Flow/Vac.	
EVGEOCD2	10/19/2015 15:21	7.9	0.15	-0.01	73.1	70.3	NSPS/EG CAI;Fully Closed;Inc. Flow/Vac.	
EVGEOCD2	10/19/2015 15:24	0.9	-0.07	-0.04	70.5	70.5	Barely Open;Surging;No Adj. Made;Check for Air Leaks	6 Days Oxygen; Immediate Correction Pressure
EVGETW10	10/13/2015 14:03	9.1	-0.04	-0.02	96.1	96.2	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	
EVGETW10	10/14/2015 10:58	7.4	-0.02	-0.01	102.2	102	NSPS/EG CAI;Barely Open;Dec. Flow/Vac.;Pump in Well	
EVGETW10	10/19/2015 15:00	3.6	-0.01	-0.01	87.7	88.1	Barely Open;Check for Air Leaks;Pump in Well	6 Days Oxygen
EVGETW11	7/10/2015 15:17	0	0.03	-0.2	90.8	90.9	NSPS/EG CAI;Inc. Flow/Vac.;Pump in Well	Immediate Correction Pressure
EVGETW12	8/25/2015 14:05	11	-12.4	-11.73	91.1	90.8	NSPS/EG CAI;Dec. Flow/Vac.;Pump in Well	
EVGETW12	9/9/2015 16:52	3.2	-6.34	-6.92	76.9	76.9	Barely Open;Check for Air Leaks;Pump in Well	15 Days Oxygen
EVGETW12	9/16/2015 14:05	10.6	-12.21	-12.13	100.3	100.3	NSPS/EG CAI;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	
EVGETW12	9/22/2015 15:38	1.2	-36.67	-35.3	105.2	105.2	No Adj. Made;Pump in Well	6 Days Oxygen
EVGETW12	10/13/2015 14:17	15.7	-20.68	-16.08	88.3	88.1	NSPS/EG CAI;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	
EVGETW12	10/14/2015 11:03	13.4	-9.35	-8.92	90.5	90.4	NSPS/EG CAI;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	
EVGETW12	10/19/2015 15:08	3.8	-5.92	-5.38	92.9	92.3	Dec. Flow/Vac.;Pump in Well	6 Days Oxygen
EVGETW13	8/25/2015 14:10	0	1.36	-0.37	69.6	71.8	NSPS/EG CAI;Inc. Flow/Vac.;Pump in Well	Immediate Correction Pressure
EVGETW13	10/13/2015 14:25	14.5	-0.57	-0.5	83.5	83.5	NSPS/EG CAI;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	
EVGETW13	10/13/2015 14:28	14.2	-0.29	-0.25	82.9	82.7	NSPS/EG CAI;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	
EVGETW13	10/14/2015 11:07	11.8	-0.18	-0.02	85.1	84.5	NSPS/EG CAI;Dec. Flow/Vac.;Check for Air Leaks;Pump in Well	

Evergreen Recycling Disposal Facility
July 1, 2015 through December 31, 2015
Well Exceedances

Device Name	Date/Time	O ₂ (Oxygen) (%)	Initial Static Pressure ("H ₂ O)	Adjusted Static Pressure ("H ₂ O)	Initial Temperature ("F)	Adjusted Temperature ("F)	Id Comments	Duration of Exceedance (Days)
EVGETW13	10/19/2015 15:15	0.5	0.01	-0.02	81.8	82.9	NSPS/EG CAI; Barely Open; Inc. Flow/Vac.; Pump in Well	6 Days Oxygen; Immediate Correction Pressure
EVGETW14	8/25/2015 14:15	13.1	-46.66	-46.58	72.6	72.4	NSPS/EG CAI; Barely Open; Dec. Flow/Vac.; Watered In; Pump in Well	
EVGETW14	9/9/2015 16:44	0.1	-56.13	-56.15	78.5	78.8	Barely Open; No Adj. Made; Watered In; Pump in Well	15 Days Oxygen
EVGETW15	9/16/2015 15:07	0	0.43	-1.41	99.4	99.4	NSPS/EG CAI; Inc. Flow/Vac.; Surging	Immediate Correction Pressure
EVGEW26R	10/14/2015 13:19	6.2	-34.69	-39.61	91.9	92.5	NSPS/EG CAI; Inc. Flow/Vac.; Other Well Influence	
EVGEW26R	10/14/2015 13:21	4.8	-42.9	-42.17	94.3	94.3	Dec. Flow/Vac.; Check for Air Leaks; Other Well Influence	Immediate Correction Oxygen
EVGEW26R	11/20/2015 12:44	5.2	-41.01	-37.47	92.5	91.4	NSPS/EG CAI; Dec. Flow/Vac.; Other Well Influence	
EVGEW26R	11/23/2015 15:01	3.2	-19.35	-18.42	74.3	73.3	Inc. Flow/Vac.; Other Well Influence	3 Days Oxygen
EVGEW26R	12/11/2015 10:46	20.6	-9.8	-11.2	54	53	NSPS/EG CAI; Fully Closed; Inc. Flow/Vac.; Barely Open; Other Well Influence	
EVGEW26R	12/11/2015 10:50	6.4	-12.4	-13	54	55	NSPS/EG CAI; Barely Open; Inc. Flow/Vac.; Other Well Influence	
EVGEW26R	12/11/2015 10:53	7.5	-13.8	-14.4	58	58	NSPS/EG CAI; Inc. Flow/Vac.; Other Well Influence	
EVGEW26R	12/11/2015 10:56	8.2	-17.8	-15.2	72	66	NSPS/EG CAI; Dec. Flow/Vac.; Barely Open; Other Well Influence	
EVGEW26R	12/15/2015 9:44	11.1	-15.6	-16	66	64	NSPS/EG CAI; Barely Open; Inc. Flow/Vac.	
EVGEW26R	12/15/2015 9:47	11	-17.2	-15.1	71	69	NSPS/EG CAI; Dec. Flow/Vac.; Fully Open; Other Well Influence	
EVGEW26R	12/21/2015 10:31	21	-10.3	-10.3	47	46	NSPS/EG CAI; Fully Closed	
EVGEW26R	12/21/2015 10:33	21.1	-10.3	-11.7	45	44	NSPS/EG CAI; Fully Closed; Inc. Flow/Vac.; Barely Open; Other Well Influence	
EVGEW26R	12/21/2015 10:38	7.1	-14.1	-14	50	51	NSPS/EG CAI; Barely Open; Dec. Flow/Vac.; Other Well Influence	20 Days Oxygen as of the end of the reporting period.
EVGW69R2	12/11/2015 12:54	0	2.5	2.6	107	107	Fully Open; NSPS/EG CAI; Header Blocked	
EVGW69R2	12/15/2015 9:52	0	6	6	105	105	Fully Open; NSPS/EG CAI; Header Blocked	
EVGW69R2	12/21/2015 10:46	0	6.3	6.3	104	105	NSPS/EG CAI; Fully Open; Header Blocked	20 Days Pressure as of the end of the reporting period.

APPENDIX B

CONTROL DEVICE DOWNTIME RECORDS

Appendix B
Description of all Downtime Events Greater than 1 Hour
Reporting Period July 1, 2015 to December 31, 2015

Date(s) of Event	Duration of Event (Hours)	Equipment Affected	Description of Downtime
12/03/15	2.67	Collection System	Shutdown Unknown; Possible Power Surge
12/06/15	13.53	Collection System	Shutdown due to high discharge pressure created by stuck actuating valve
12/20/15	2.93	Collection System	Shutdown Unknown; Possible Power Surge

APPENDIX C

QUARTERLY SURFACE EMISSIONS MONITORING RESULTS



TO: John Randolph
FROM: Beth Shiverdecker
CC: Steve Lonneman, Brian Farmer, Rodney Nemeth
RE: 3rd Quarter 2015 Surface Emissions Monitoring Report
Evergreen Landfill
DATE: October 5, 2015

Waste Management completed the 3rd Quarter Surface Emissions Monitoring (SEM) event at Evergreen Landfill located at 2625 East Broadway, Northwood, Ohio on September 23 and 24, 2015. The monitoring was conducted in accordance with the requirements set forth in the New Source Performance Standard (NSPS), 40 CFR 60.755 (c) and (d) and 40 CFR 60, Appendix A, Method 21, promulgated by the USEPA. A Photovac (Micro FID) Flame ionization detector was used to perform the emissions monitoring and was calibrated in accordance with USEPA Method 21. Prior to monitoring being completed background concentrations were taken upwind and downwind of the landfill footprint and the technician was approximately 100 feet away from the perimeter of the landfill for this calibration event. Once background was established the technician conducted continuous monitoring of the surface of the landfill by following the serpentine pattern established for the facility, giving special attention to monitoring unusual cover conditions (i.e. stressed vegetation, cracks, seeps), and any areas with unusual odors. Areas with active gas collection components including landfill gas wells, aboveground exposed landfill gas collection system components, and leachate structures were monitored as well. Active waste disposal areas and steep slopes were excluded for safety purposes.

MONITORING SUMMARY

At the time of the initial surveys, there were no areas of FID reading greater than 500-ppm methane detected above background measurements.

During all events, the technician would make observations of the ground surface of the landfill and noted that surface areas appeared to be in good condition, and no unusual odors were detected. All field and calibration logs completed by the field tech are included with this summary as attachments.



**Weather Conditions - During Surface Emissions Monitoring
Evergreen Landfill**

Date	Initial	Temperature	Wind	Conditions
	10-day re-monitor			
	30-day re-monitor			
9/23/2015	Initial (Uncapped Areas)	78 degrees F	5-10 mph - NE	Partly Cloudy
9/24/2015	Initial (North and South Capped Areas)	76 degrees F	0-5 mph - NNE	Sunny



Table 1
Calibration Precision Test Record

EVERGREEN LANDFILL - Uncapped Areas

Date: 09/23/15	Expiration Date: 12/23/15
Time: 14:00	Calibration Gas Standard: 500 ppm (STD)
Instrument Make: Photovac #CZHG314	Instrument Model: Micro FID

Measurement #1		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	500.0	ppm
Measurement #2		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	499.0	ppm
Measurement #3		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	500.0	ppm

Calculate Precision*:		
$\frac{\#1 + \#2 + \#3}{3} \times \frac{1}{500} \times 100$	0.07%	<10%

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.2.2), the calibration precision shall be equal to or less than 10 percent of the calibration gas value.



Table 1
Calibration Precision Test Record

EVERGREEN LANDFILL - North and South Capped Areas

Date: 09/24/15	Expiration Date: 12/24/15
Time: 10:00 AM	Calibration Gas Standard: 500 ppm (STD)
Instrument Make: Photovac #CZHG314	Instrument Model: Micro FID

Measurement #1		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	499.0	ppm
Measurement #2		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	498.0	ppm
Measurement #3		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	500.0	ppm

Calculate Precision*:		
$\frac{\#1 + \#2 + \#3}{3} \times \frac{1}{500} \times 100$	0.20%	<10%

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.2.2), the calibration precision shall be equal to or less than 10 percent of the calibration gas value.



Table 2
Response Time Test Record

EVERGREEN LANDFILL - Uncapped Areas

Date:	Time:
9/23/2015	2:00 PM
Instrument Make:	Instrument Model:
Photovac #CZHG314	Micro FID

Measurement #1		
Stabilized Reading Using Calibration Gas:	500.0	ppm
90% of the Stabilized Reading:	450.0	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	10	seconds (1)

Measurement #2		
Stabilized Reading Using Calibration Gas:	499.0	ppm
90% of the Stabilized Reading:	449.1	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	11	seconds (2)

Measurement #3		
Stabilized Reading Using Calibration Gas:	500.0	ppm
90% of the Stabilized Reading:	450	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	11	seconds (3)

Calculate Response Time*:		
$\frac{(1) + (2) + (3)}{3}$	10.67	seconds

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.3.2), the instrument response time shall be equal to or less than 30 seconds.



Table 2
Response Time Test Record

EVERGREEN LANDFILL - North and South Capped Areas

Date:	Time:
9/24/2015	10:00 AM
Instrument Make:	Instrument Model:
Photovac #CZHG314	Micro FID

Measurement #1

Stabilized Reading Using Calibration Gas:	499.0	ppm
90% of the Stabilized Reading:	449.1	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	10	seconds (1)

Measurement #2

Stabilized Reading Using Calibration Gas:	498.0	ppm
90% of the Stabilized Reading:	448.2	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	12	seconds (2)

Measurement #3

Stabilized Reading Using Calibration Gas:	500.0	ppm
90% of the Stabilized Reading:	450	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	15	seconds (3)

Calculate Response Time*:

$$\frac{(1) + (2) + (3)}{3} \quad 12.33 \quad \text{seconds}$$

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.3.2), the instrument response time shall be equal to or less than 30 seconds.



Table 3
Calibration Procedure, Background Determination, and Post-Monitoring Calibration Check

EVERGREEN LANDFILL - Uncapped Areas

Date: 9/23/2015	Time: 6:00 PM
Instrument Make: Photovac #CZHG314	Instrument Model: Micro FID

Calibration Procedure:		
1. Allow instrument to warm up according to manufacturer's instructions.		
2. Introduce calibration gas to probe.		
Calibration gas standard	500.0	ppm
Stable instrument reading	500.0	ppm
3. Follow instrument calibration procedure per the manufacturer's instructions.		
Background Determination Procedure		
1. Upwind Reading		
(highest in 30 seconds)	0.0	ppm (1)
2. Downwind Reading		
(highest in 30 seconds)	0.0	ppm (2)
Calculate Background Value:		
$\frac{(1) + (2)}{2}$	0.0	ppm
Post Monitoring Calibration Check		
1. Zero Air	0.1	ppm
2. 500 ppm	475.0	ppm

Performed by: Brian Farmer



Table 3
Calibration Procedure, Background Determination, and Post-Monitoring Calibration Check

EVERGREEN LANDFILL - North and South Capped Areas

Date:	Time:
9/24/2015	2:00 PM
Instrument Make:	Instrument Model:
Photovac #CZHG314	Micro FID

Calibration Procedure:		
1. Allow instrument to warm up according to manufacturer's instructions.		
2. Introduce calibration gas to probe.		
Calibration gas standard	500.0	ppm
Stable instrument reading	499.0	ppm
3. Follow instrument calibration procedure per the manufacturer's instructions.		
Background Determination Procedure		
1. Upwind Reading		
(highest in 30 seconds)	0.0	ppm (1)
2. Downwind Reading		
(highest in 30 seconds)	0.0	ppm (2)
Calculate Background Value:		
$\frac{(1) + (2)}{2}$	0.0	ppm
Post Monitoring Calibration Check		
1. Zero Air		
	0.0	ppm
2. 500 ppm		
	480.0	ppm

Performed by: Brian Farmer



Table 4
Surface Monitoring Exceedance Log

EVERGREEN LANDFILL - Uncapped Areas

Sampler ID: Brian Farmer	Instrument Make/Model: Photovac #CZHG314 / Micro FID
Date: 09/23/15	Barometric Pressure: 30.30" Hg
Weather: 78 degrees F, Partly Cloudy	Wind: 5-10 mph NE

X	NO EXCEEDANCES OBSERVED ON THESE DATES
----------	---

Surface Monitoring Point	Background Concentration (ppm)	Methane Concentration (ppm)	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			



Table 4
Surface Monitoring Exceedance Log

EVERGREEN LANDFILL - North and South Capped Areas

Sampler ID: Brian Farmer	Instrument Make/Model: Photovac #CZHG314 / Micro FID
Date: 09/24/15	Barometric Pressure: 30.15" Hg
Weather: 76 degrees F, Sunny	Wind: 0-5 mph NNE

X	NO EXCEEDANCES OBSERVED ON THESE DATES
----------	---

Surface Monitoring Point	Background Concentration (ppm)	Methane Concentration (ppm)	Comments
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

INSTRUMENT CALIBRATION REPORT



Pine Environmental Services, LLC.

5170 Hudson Drive, Suite E

Hudson, OH 44236

Toll-free: (877) 326-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 910
Description Photovac Micro FID
Calibrated 9/22/2015 8:10:32AM

Manufacturer Photovac
Model Number Micro FID
Serial Number/ Lot CZHG314
Number
Location Ohio
Department

State Certified
Status Pass
Temp °C 20.3
Humidity % 46

Calibration Specifications

Group # 1				Range Acc % 0.0000			
Group Name Methane				Reading Acc % 3.0000			
Stated Accy Pct of Reading				Plus/Minus 0.00			
<u>Nom In Val / In Val</u>	<u>In Type</u>	<u>Out Val</u>	<u>Out Type</u>	<u>End As</u>	<u>Lft As</u>	<u>Dev%</u>	<u>Pass/Fail</u>
500.00 / 500.00	PPM	500.00	PPM	495.60	498.50	-0.30%	Pass
Group # 2				Range Acc % 0.0000			
Group Name Methane				Reading Acc % 0.0000			
Stated Accy Pct of Range				Plus/Minus 0.00			
<u>Nom In Val / In Val</u>	<u>In Type</u>	<u>Out Val</u>	<u>Out Type</u>	<u>End As</u>	<u>Lft As</u>	<u>Dev%</u>	<u>Pass/Fail</u>
10000.00 / 10000.00	PPM	0.00	PPM	9,983.00	9,996.00	0.00%	Pass

Test Instruments Used During the Calibration

Test Standard ID	Description	Manufacturer	Model Number	Serial Number / Lot Number	(As Of Cal Entry Date)	
					Last Cal Date/ Opened Date	Next Cal Date / Expiration Date
OH 500PPM METHANE	OH CH4 500 METH	Pine Environmental Services, Inc.	GPI2030	JAO-150A-500- 1	9/2/2018	
OH CH4 10000-PPM (1%)	OH CH4 10000 007368	Pine Environmental Services, Inc.	GPI2050	MAL150a1000 01	12/1/2015	

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kurt Cessna



TO: John Randolph
FROM: Beth Shiverdecker
CC: Steve Lonneman, Brian Farmer, Rodney Nemeth
RE: 4th Quarter 2015 Surface Emissions Monitoring Report
Evergreen Landfill
DATE: January 25, 2016

Waste Management completed the 4th Quarter Surface Emissions Monitoring (SEM) event at Evergreen Landfill located at 2625 East Broadway, Northwood, Ohio on December 17 and 18, 2015. The monitoring was conducted in accordance with the requirements set forth in the New Source Performance Standard (NSPS), 40 CFR 60.755 (c) and (d) and 40 CFR 60, Appendix A, Method 21, promulgated by the USEPA. A Photovac (Micro FID) Flame ionization detector was used to perform the emissions monitoring and was calibrated in accordance with USEPA Method 21. Prior to monitoring being completed background concentrations were taken upwind and downwind of the landfill footprint and the technician was approximately 100 feet away from the perimeter of the landfill for this calibration event. Once background was established the technician conducted continuous monitoring of the surface of the landfill by following the serpentine pattern established for the facility, giving special attention to monitoring unusual cover conditions (i.e. stressed vegetation, cracks, seeps), and any areas with unusual odors. Areas with active gas collection components including landfill gas wells, aboveground exposed landfill gas collection system components, and leachate structures were monitored as well. Active waste disposal areas and steep slopes were excluded for safety purposes.

MONITORING SUMMARY

There were five (5) FID readings greater than 500-ppm methane above background during the initial scan of the uncapped areas. Additional soil was placed on the exceedance locations. The 10-day recheck was conducted on December 24, 2015 and the 30-day recheck was conducted on January 22, 2016. Both re-monitoring events showed methane readings less than 500-ppm above background. Horizontal collectors were installed in the vicinity of the exceedance locations to increase landfill gas collection.

During all events, the technician would make observations of the ground surface of the landfill and noted that surface areas appeared to be in good condition, and no unusual odors were detected. All field and calibration logs completed by the field tech are included with this summary as attachments.



**Weather Conditions - During Surface Emissions Monitoring
Evergreen Landfill**

Date	Initial	Temperature	Wind	Conditions
	10-day re-monitor			
	30-day re-monitor			
12/17/2015	Initial (Uncapped Areas)	45 degrees F	5-10 mph - NE	Cloudy
12/18/2015	Initial (North and South Capped Areas)	30 degrees F	20-25 mph - West	Overcast
12/24/2015	10-day re-monitor	46 degrees F	15-20 mph - WSW	Clear
1/22/2016	30-day re-monitor	28 degrees F	5-10 mph - NNE	Cloudy, Flurries



Table 1
Calibration Precision Test Record

EVERGREEN LANDFILL - Uncapped Areas

Date: 12/17/15	Expiration Date: 03/17/16
Time: 10:00	Calibration Gas Standard: 500 ppm (STD)
Instrument Make: Photovac #CZUM310	Instrument Model: Micro FID

Measurement #1		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	501.0	ppm
Measurement #2		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	500.0	ppm
Measurement #3		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	500.0	ppm

Calculate Precision*:		
$\frac{\#1 + \#2 + \#3}{3} \times \frac{1}{500} \times 100$	0.07%	<10%

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.2.2), the calibration precision shall be equal to or less than 10 percent of the calibration gas value.



Table 1
Calibration Precision Test Record

EVERGREEN LANDFILL - North and South Capped Areas

Date: 12/18/15	Expiration Date: 03/18/16
Time: 10:00 AM	Calibration Gas Standard: 500 ppm (STD)
Instrument Make: Photovac #CZUM310	Instrument Model: Micro FID

Measurement #1		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	500.0	ppm
Measurement #2		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	498.0	ppm
Measurement #3		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	498.0	ppm

Calculate Precision*:		
$\frac{\#1 + \#2 + \#3}{3} \times \frac{1}{500} \times 100$	0.27%	<10%

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.2.2), the calibration precision shall be equal to or less than 10 percent of the calibration gas value.



Table 1
Calibration Precision Test Record

EVERGREEN LANDFILL - 10-Day Re-Monitoring

Date: 12/24/15	Expiration Date: 03/17/16
Time: 10:00 AM	Calibration Gas Standard: 500 ppm (STD)
Instrument Make: Photovac #CZUM310	Instrument Model: Micro FID

Measurement #1		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	501.0	ppm
Measurement #2		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	499.0	ppm
Measurement #3		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	498.0	ppm

Calculate Precision*:		
$\frac{\#1 + \#2 + \#3}{3} \times \frac{1}{500} \times 100$	0.27%	<10%

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.2.2), the calibration precision shall be equal to or less than 10 percent of the calibration gas value.



Table 1
Calibration Precision Test Record

EVERGREEN LANDFILL - 30-Day Re-Monitoring

Date: 01/22/16	Expiration Date: 03/17/16
Time: 10:00 AM	Calibration Gas Standard: 500 ppm (STD)
Instrument Make: Photovac #CZVG305	Instrument Model: Micro FID

Measurement #1		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	490.0	ppm
Measurement #2		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	499.0	ppm
Measurement #3		
Meter Reading for Zero Air:	0.0	ppm
Meter Reading for Calibration Gas:	501.0	ppm

Calculate Precision*:		
$\frac{\#1 + \#2 + \#3}{3} \times \frac{1}{500} \times 100$	0.80%	<10%

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.2.2), the calibration precision shall be equal to or less than 10 percent of the calibration gas value.



Table 2
Response Time Test Record

EVERGREEN LANDFILL - Uncapped Areas

Date:	Time:
12/17/2015	10:00 AM
Instrument Make:	Instrument Model:
Photovac #CZUM310	Micro FID

Measurement #1

Stabilized Reading Using Calibration Gas:	501.0	ppm
90% of the Stabilized Reading:	450.9	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	11	seconds (1)

Measurement #2

Stabilized Reading Using Calibration Gas:	500.0	ppm
90% of the Stabilized Reading:	450	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	11	seconds (2)

Measurement #3

Stabilized Reading Using Calibration Gas:	500.0	ppm
90% of the Stabilized Reading:	450	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	10	seconds (3)

Calculate Response Time*:

$\frac{(1) + (2) + (3)}{3}$	10.67	seconds
-----------------------------	-------	---------

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.3.2), the instrument response time shall be equal to or less than 30 seconds.



Table 2
Response Time Test Record

EVERGREEN LANDFILL - North and South Capped Areas

Date:	Time:
12/18/2015	10:00 AM
Instrument Make:	Instrument Model:
Photovac #CZUM310	Micro FID

Measurement #1

Stabilized Reading Using Calibration Gas:	500.0	ppm
90% of the Stabilized Reading:	450.0	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	13	seconds (1)

Measurement #2

Stabilized Reading Using Calibration Gas:	498.0	ppm
90% of the Stabilized Reading:	448.2	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	13	seconds (2)

Measurement #3

Stabilized Reading Using Calibration Gas:	498.0	ppm
90% of the Stabilized Reading:	448.2	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	14	seconds (3)

Calculate Response Time*:

$$\frac{(1) + (2) + (3)}{3}$$

13.33 seconds

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.3.2), the instrument response time shall be equal to or less than 30 seconds.



**Table 2
Response Time Test Record**

EVERGREEN LANDFILL - 10-Day Re-Monitoring

Date:	Time:
12/24/2015	10:00 AM
Instrument Make:	Instrument Model:
Photovac #CZUM310	Micro FID

Measurement #1		
Stabilized Reading Using Calibration Gas:	501.0	ppm
90% of the Stabilized Reading:	450.9	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	14	seconds (1)

Measurement #2		
Stabilized Reading Using Calibration Gas:	499.0	ppm
90% of the Stabilized Reading:	449.1	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	13	seconds (2)

Measurement #3		
Stabilized Reading Using Calibration Gas:	498.0	ppm
90% of the Stabilized Reading:	448.2	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	12	seconds (3)

Calculate Response Time*:		
$\frac{(1) + (2) + (3)}{3}$	13.00	seconds

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.3.2), the instrument response time shall be equal to or less than 30 seconds.



**Table 2
Response Time Test Record**

EVERGREEN LANDFILL - 30-Day Re-Monitoring

Date:	Time:
1/22/2016	10:00 AM
Instrument Make:	Instrument Model:
Photovac #CZVG305	Micro FID

Measurement #1		
Stabilized Reading Using Calibration Gas:	490.0	ppm
90% of the Stabilized Reading:	441.0	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	15	seconds (1)

Measurement #2		
Stabilized Reading Using Calibration Gas:	499.0	ppm
90% of the Stabilized Reading:	449.1	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	16	seconds (2)

Measurement #3		
Stabilized Reading Using Calibration Gas:	501.0	ppm
90% of the Stabilized Reading:	450.9	ppm
Time to Reach 90% of Stabilized Reading after Switching from Zero Air to Calibration Gas:	15	seconds (3)

Calculate Response Time*:		
$\frac{(1) + (2) + (3)}{3}$	15.33	seconds

Performed by: Brian Farmer

*Per 40 CFR 60, Appendix A, Method 21 (8.1.3.2), the instrument response time shall be equal to or less than 30 seconds.



Table 3
Calibration Procedure, Background Determination, and Post-Monitoring Calibration Check

EVERGREEN LANDFILL - Uncapped Areas

Date:	Time:
12/17/2015	4:00 PM
Instrument Make:	Instrument Model:
Photovac #CZUM310	Micro FID

Calibration Procedure:		
1. Allow instrument to warm up according to manufacturer's instructions.		
2. Introduce calibration gas to probe.		
Calibration gas standard	500.0	ppm
Stable instrument reading	500.0	ppm
3. Follow instrument calibration procedure per the manufacturer's instructions.		
Background Determination Procedure		
1. Upwind Reading		
(highest in 30 seconds)	0.0	ppm (1)
2. Downwind Reading		
(highest in 30 seconds)	0.8	ppm (2)
Calculate Background Value:		
$\frac{(1) + (2)}{2}$	0.4	ppm
Post Monitoring Calibration Check		
1. Zero Air		
	0.5	ppm
2. 500 ppm		
	488.0	ppm

Performed by: Brian Farmer



Table 3
Calibration Procedure, Background Determination, and Post-Monitoring Calibration Check

EVERGREEN LANDFILL - North and South Capped Areas

Date: 12/18/2015	Time: 12:00 PM
Instrument Make: Photovac #CZUM310	Instrument Model: Micro FID

Calibration Procedure:		
1. Allow instrument to warm up according to manufacturer's instructions.		
2. Introduce calibration gas to probe.		
Calibration gas standard	500.0	ppm
Stable instrument reading	498.0	ppm
3. Follow instrument calibration procedure per the manufacturer's instructions.		
Background Determination Procedure		
1. Upwind Reading		
(highest in 30 seconds)	0.0	ppm (1)
2. Downwind Reading		
(highest in 30 seconds)	0.0	ppm (2)
Calculate Background Value:		
$\frac{(1) + (2)}{2}$	0.0	ppm
Post Monitoring Calibration Check		
1. Zero Air	0.1	ppm
2. 500 ppm	489.0	ppm

Performed by: Brian Farmer



Table 3
Calibration Procedure, Background Determination, and Post-Monitoring
Calibration Check

EVERGREEN LANDFILL - 10-Day Re-Monitoring

Date: 12/24/2015	Time: 11:30 AM
Instrument Make: Photovac #CZUM310	Instrument Model: Micro FID

Calibration Procedure:

1. Allow instrument to warm up according to manufacturer's instructions.
2. Introduce calibration gas to probe.

Calibration gas standard	500.0	ppm
Stable instrument reading	498.0	ppm
3. Follow instrument calibration procedure per the manufacturer's instructions.

Background Determination Procedure

1. Upwind Reading
(highest in 30 seconds)

0.0	ppm (1)
-----	---------
2. Downwind Reading
(highest in 30 seconds)

0.0	ppm (2)
-----	---------

Calculate Background Value:

$\frac{(1) + (2)}{2}$	0.0	ppm
-----------------------	-----	-----

Post Monitoring Calibration Check

1. Zero Air

0.6	ppm
-----	-----
2. 500 ppm

485.0	ppm
-------	-----

Performed by: Brian Farmer



Table 3
Calibration Procedure, Background Determination, and Post-Monitoring Calibration Check

EVERGREEN LANDFILL - 30-Day Re-Monitoring

Date: 1/22/2016	Time: 10:30 AM
Instrument Make: Photovac #CZVG305	Instrument Model: Micro FID

Calibration Procedure:

1. Allow instrument to warm up according to manufacturer's instructions.
2. Introduce calibration gas to probe.

Calibration gas standard	500.0	ppm
Stable instrument reading	501.0	ppm
3. Follow instrument calibration procedure per the manufacturer's instructions.

Background Determination Procedure

1. Upwind Reading
(highest in 30 seconds)

0.0	ppm (1)
-----	---------
2. Downwind Reading
(highest in 30 seconds)

6.5	ppm (2)
-----	---------

Calculate Background Value:

$\frac{(1) + (2)}{2}$	3.25	ppm
-----------------------	------	-----

Post Monitoring Calibration Check

1. Zero Air

0.0	ppm
-----	-----
2. 500 ppm

489.0	ppm
-------	-----

Performed by: Brian Farmer

Table 4
Surface Monitoring Exceedance Log

EVERGREEN LANDFILL - North and South Capped Areas

Sampler ID: Brian Farmer	Instrument Make/Model: Photovac #CZUM310 / Micro FID
Date: 12/18/15	Barometric Pressure: 29.82" Hg
Weather: 30 degrees F, Overcast	Wind: 20-25 mph West

X	NO EXCEEDANCES OBSERVED ON THESE DATES
---	--

[illegible]

Table 4
Surface Monitoring Exceedance Log

EVERGREEN LANDFILL - 10-Day Re-Monitoring

Sampler ID: Brian Farmer	Instrument Make/Model: Photovac #CZUM310 / Micro FID
Date: 12/24/15	Barometric Pressure: 30.03" Hg
Weather: 46 degrees F, Clear	Wind: 15-20 mph WSW

X	NO EXCEEDANCES OBSERVED ON THESE DATES
---	--

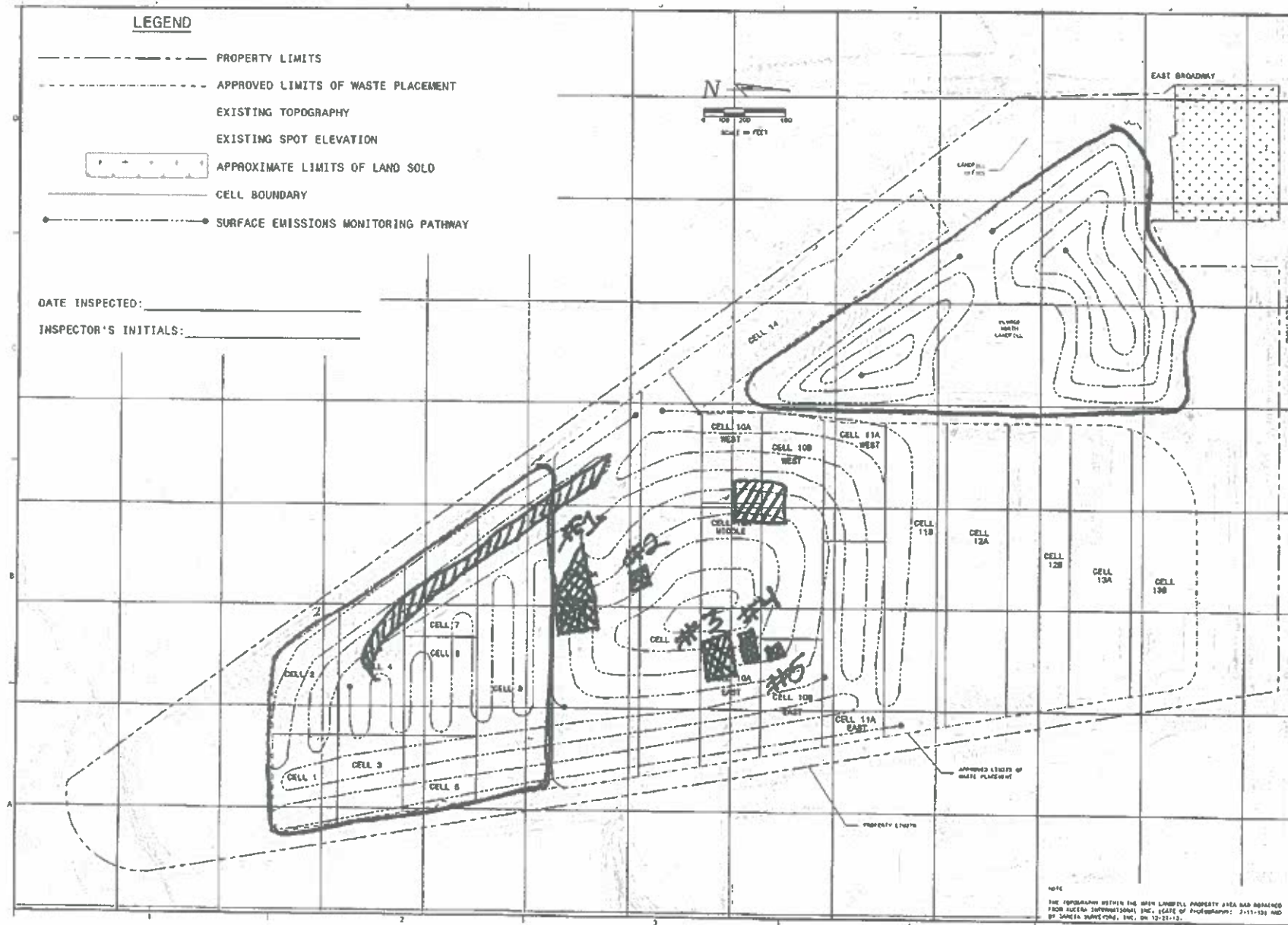
[illegible]

LEGEND

- PROPERTY LIMITS
- APPROVED LIMITS OF WASTE PLACEMENT
- EXISTING TOPOGRAPHY
- EXISTING SPOT ELEVATION
- APPROXIMATE LIMITS OF LAND SOLD
- CELL BOUNDARY
- SURFACE EMISSIONS MONITORING PATHWAY

DATE INSPECTED: _____

INSPECTOR'S INITIALS: _____



Hull
Associates, Inc.
Inventive. Analytical. Strategic. Creative.
10000 W. 10th Ave., Suite 100
North Platte, NE 68101
402.434.1111
hullassociates.com

Professional Seal
Name _____
Date _____
Project File _____

EVERGREEN RECYCLING AND DISPOSAL FACILITY, INC.

EVERGREEN RECYCLING AND DISPOSAL FACILITY, INC.
2025 EAST BROADWAY
NORTHWOOD, OHIO 43040

Site Plan
Surface Emissions Monitoring Pathway
Project No.: 100170
Site No.: 100170-10000
Plan Date: 12/21/12
Scale: 1"=100'
Drawn By: JAC
Checked By: JAC
Title: SITE PLAN
Date: 12/21/12

Sheet Number: C-101

Working Face/excluded
Certified closed/capped

- Hit cover needed

INSTRUMENT CALIBRATION REPORT



Pine Environmental Services, LLC.

5170 Hudson Drive, Suite E
Hudson, OH 44236
Toll-free: (877) 326-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID I3331
Description Photovac MicroFID
Calibrated 12/11/2015 1:51:19PM

Manufacturer Photovac
Model Number MicroFID
Serial Number/ Lot Number CZUM310
Location Ohio
Department

State Certified
Status Pass
Temp °C 20.3
Humidity % 34

Calibration Specifications

Group # 1
Group Name Methane
Stated Accy Pct of Range

Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 0.00

<u>Norm In Val / In Val</u>	<u>In Type</u>	<u>Out Val</u>	<u>Out Type</u>	<u>Fnd As</u>	<u>Lft As</u>	<u>Dev%</u>	<u>Pass/Fail</u>
500.00 / 500.00	PPM	100.00	PPM	497.30	499.50	399.50%	Pass
10000.00 / 10000.00	PPM	10000.00	PPM	10,034.00	9,992.00	-0.08%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>Next Cal Date / Expiration Date</u>
OH 500PPM METHANE	OH CH4 500 METH	Pine Environmental Services, Inc.	GPI2030	JAO-150A-500-1	9/2/2018
OH CH4 10000-PPM (1%)	OH CH4 10000 007368	Pine Environmental Services, Inc.	GPI2050	MAL150a1000 01	12/1/2015

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kurt Cessna

All instruments are calibrated by Pine Environmental Services, LLC. according to the manufacturer's specifications, but it is the customer's responsibility to calibrate and maintain this unit in accordance with the manufacturer's specifications and/or the customer's own specific needs.

Notify Pine Environmental Services, LLC. of any defect within 24 hours of receipt of equipment
Please call 866-960-7463 for Technical Assistance



INSTRUMENT CALIBRATION REPORT

Pine Environmental Services, LLC.

5170 Hudson Drive, Suite E
Hudson, OH 44236
Toll-free: (877) 326-PINE (7463)

Pine Environmental Services, Inc.

Instrument ID 14646
Description Photovac MicroFID
Calibrated 1/20/2016 8:13:06AM

Manufacturer Photovac
Model Number Micro FID
Serial Number/ Lot CZVG305
Number
Location Ohio
Department

State Certified
Status Pass
Temp °C 20.8
Humidity % 22

Calibration Specifications

Group # 1
Group Name Methane
Stated Accy Pct of Reading

Range Acc % 0.0000
Reading Acc % 3.0000
Plus/Minus 0.0

<u>Nom In Val / In Val</u>	<u>In Type</u>	<u>Out Val</u>	<u>Out Type</u>	<u>Fnd As</u>	<u>Lft As</u>	<u>Dev%</u>	<u>Pass/Fail</u>
500.0 / 500.0	PPM	500.0	PPM	497.5	499.8	-0.04%	Pass

Group # 2
Group Name Methane
Stated Accy Pct of Range

Range Acc % 0.0000
Reading Acc % 0.0000
Plus/Minus 0.00

<u>Nom In Val / In Val</u>	<u>In Type</u>	<u>Out Val</u>	<u>Out Type</u>	<u>Fnd As</u>	<u>Lft As</u>	<u>Dev%</u>	<u>Pass/Fail</u>
10000.00 / 10000.00	PPM	500.00	PPM	10,012.00	9,998.00	1,899.60%	Pass

Test Instruments Used During the Calibration

(As Of Cal Entry Date)

<u>Test Standard ID</u>	<u>Description</u>	<u>Manufacturer</u>	<u>Model Number</u>	<u>Serial Number / Lot Number</u>	<u>Next Cal Date / Last Cal Date/ Expiration Date Opened Date</u>
OH 500PPM METHANE	OH CH4 500 METH	Pine Environmental Services, Inc.	GP12030	JAO-150A-500- 1	9/2/2018
OH CH4 10000-PPM (1%)	OH CH4 10000 007368	Pine Environmental Services, Inc.	GP12050	MAL150a1000 01	12/1/2015

Notes about this calibration

Calibration Result Calibration Successful
Who Calibrated Kurt Cessna

APPENDIX D

2015 LFG SYSTEM CONSTRUCTION DRAWINGS

